

In the Matter of

Review of Quiet Zones Applications
Procedures

WT Docket No. 01-319

Comments of RCC Consultants, Inc.

RCC Consultants, Inc. ("RCC") is a leading radio and telecommunications consulting firm specializing in the needs of the public safety community. A number of RCC's clients have been adversely affected by the current application procedures for radio facilities proposed to be located near Quiet Zones.

RCC's comments on the Commission's Notice of Proposed Rulemaking ("NPRM") in WT Docket No. 01-319 are limited to the National Radio Quiet Zone ("NRQZ") that protects the National Radio Astronomy Observatory ("NRAO") in Green Bank, West Virginia and the Naval Radio Research Observatory ("NRRO") in Sugar Grove, West Virginia.

As stated in the NPRM, the Commission considers the protection of Quiet Zone areas from radiofrequency interference to be critically important. While RCC agrees that these facilities and the work carried out there should receive such protection, RCC believes that the public interest demands that the economic and public safety implications of current and future processes and procedures for analyzing the potential interference be examined in light of the critical needs and severe economic limitations of the public safety community in these areas.

The NPRM is focused on the processing of applications, but does not address the more important issues of:

- The interference protection criteria used by these facilities should be subject to the Commission's rules, and due process should be provided to determine the reasonableness of the existing criteria and any future changes. The NRQZ facilities can, and have, changed their interference parameters at will with no opportunity for public comment or appeal.
- A clear process for performing interference studies should be established in the Commission's rules, including the selection and publication of a point-to-point propagation model that can be independently implemented by applicants or their engineering consultants. All parameters needed to perform the interference analyses should be published and should be replicable by a competent engineer. The Commission suggests pre-coordination with the NRQZ facilities. This has been helpful in the past, but it is a trial and error process, that RCC believes is unnecessary and burdensome for applicants. Published interference criteria, as have been established for years in co-channel interference studies in the Broadcasting, Commercial and Private Radio services, should be established for NRQZ analyses.
- A clear process for appeals of interference objections raised by NRAO and NRRO should be established in the Commission's rules. RCC's experience in recent years indicates that the present method of determining acceptable effective radiated power ("ERP") toward Green Bank and Sugar Grove is subject to error. In the processing of applications for public safety UHF facilities for Augusta County, Virginia, for example, a substantial delay was experienced due to disagreement over the permissible ERP from two sites. RCC and NRAO both performed point-to-point propagation predictions over the same paths and arrived at different results. NRAO ultimately agreed to perform measurements of the received signal at Green Bank. The results varied substantially from the predicted values of both RCC and NRAO. This process involved substantial expense on the part of Augusta County and delayed the implementation of their new public safety communications system for months.
- The interference criteria as presently established by NRAO generally makes use of the 700-800 MHz public safety frequency bands economically infeasible in several counties of Virginia west of the Blue Ridge Mountains. This area is growing in population and is traversed by major Interstate Highways. Its public safety agencies are denied the benefits of interoperability and mutual aid communications with public safety agencies located to the east of the Blue Ridge who have been able to implement 800 MHz systems.

The adoption of clear interference protection criteria and a clear process for appeals to interference objections raised by NRAO and NRRO would expedite the processing of applications for critical public safety radio transmitting facilities. Moreover, RCC believes that Commission action in this regard could better enable certain public safety agencies to utilize the 700-800 MHz public safety bands and enjoy the substantial benefits of interoperability and mutual aid communications with neighboring jurisdictions.

Comments on Initial Regulatory Flexibility Analysis:

Local governments and non-profit agencies that are located in the NRQZ pay more to install and operate radio communications systems. Extraordinary steps must be taken to install radio systems that meet the interference control criteria of the NRQZ. Directional antennas, reduced ERP, and sites that are constructed on mountainsides rather than on higher mountaintops reduce the area covered by the sites. These extraordinary steps generally result in diminished radio system performance in the area where coverage is required. More antenna sites are needed to provide satisfactory radio coverage due to the NRQZ restrictions. In the worst case, public safety agencies are forced to accept diminished radio system performance due to impractical limits on ERP that are required by the NRAO.

NRQZ restrictions generally result in reduced ERP toward the two protected facilities in West Virginia at Green Bank and Sugar Grove. Steps that must be taken to meet these requirements include:

- operating transmitters at reduced power,
- employment of directional antennas to protect NRAO and NRRO. These two facilities are geographically separated and selection of an antenna to provide interference protection over such a wide area is difficult, if not impossible. Depending on the location within the NRQZ, antennas selected for interference protection do not necessarily direct power where it is needed for coverage
- construction of antenna sites on the sides of mountains instead of on the top (where coverage of two valleys would be provided instead of one). RCC's clients have been forced to bulldoze shelves on mountainsides to build sites where existing structures on the top of a mountain were readily available that would have provided better coverage

The effect of the NRQZ requirements produces a de facto unfunded Federal mandate. Local governments and small entities receive no reimbursement or Federal money to compensate them for the additional expense that they incur in the process of meeting the NRQZ criteria.

If the continuation of the NRQZ is truly a national priority, as represented by the National Science Foundation personnel with whom RCC has met, the Federal Government should compensate the local governments and radio communications systems operators for the costs associated with complying with the NRQZ requirements.

Interference criteria imposed by the NRQZ are not embedded in Commission regulations. FCC Rule 90.117(?) merely provides for a notification period of twenty days from filing a radio license application, during which time the NRAO can apply any standard that it, in its sole discretion, deems appropriate. Published radio propagation models and criteria that are used in most other radio interference studies (co-channel interference limits in Commercial Mobile Radio Services, Broadcasting, and Private Radio Services) are denied to applicants for radio licenses located in the NRQZ. Independent evaluation of interference cases is difficult due to the lack of established procedures in the Commission's regulations. The NRAO can arbitrarily change interference criteria with no due process provided to the public to provide comments or opposition to the changes. There is some indication that the NRAO has recently imposed such a change by increasing the antenna height at which the interference levels are calculated at Green Bank. This has had the effect of further reducing the amount of power that can be radiated from antenna sites in the NRQZ.

The measures proposed by RCC, if adopted by the Commission, would in no way diminish interference protection afforded to NRQZ facilities and would result in a number of important public interest benefits, including: clear, objective interference protection criteria for applicants to follow; expedited application processing; and reduced costs and enhanced functionality for the public safety community.